A. Amendments to the Claims:

The below listing of claims will replace all prior versions and listings of claims in the subject application.

Claim 1. (currently amended) A process for recovering ethane from a hydrocarbon gas stream having methane, ethane and propane comprising:

(a) providing the hydrocarbon gas stream comprising from about 50 % to about 75 % by mole methane, from about 15 % to about 40 % by mole ethane and from about 1 % to about 4 % by mole propane;

(b) cooling the hydrocarbon gas stream to provide a partially condensed feed stream;

(c) separating the partially condensed feed stream into a vapor stream and a condensed liquid feed stream;

(d) providing a cryogenic heat exchanger;

(e) cooling the vapor stream in the cryogenic heat exchanger by refrigeration to form a cooled and substantially condensed hydrocarbon feed stream;

(f) separating the cooled and substantially condensed hydrocarbon feed stream into a methane-rich stream and an ethane/propane-rich stream, said methane-rich stream having a first pressure and a first temperature;

(g) expanding said methane-rich stream from said first pressure to a second pressure to lower the temperature of said methane-rich stream from said first temperature to a second temperature to provide a cooling source for said refrigeration, wherein said second pressure is lower than said first pressure and further wherein said second temperature is lower than said first temperature;

(h) separating said ethane/propane-rich stream into an ethane-rich stream and a propane-rich stream; and

(i) recovering said ethane-rich stream.

Claim 2. (original) The process of claim 1 wherein said expanding of said methane-rich stream further includes:

turboexpanding said methane-rich stream.

Claim 3. (original) The process of claim 1 wherein said expanding of said methane-rich stream further includes:

compressing said methane-rich stream into a compressed methane-rich stream;

cooling said compressed methane-rich stream; and

turboexpanding the cooled and compressed methane-rich stream.

Claim 4. (previously presented) The process of claim 1 wherein separating said cooled and substantially condensed hydrocarbon feed stream further includes:

distilling said cooled and substantially condensed hydrocarbon feed stream in a demethanizer column.

Claim 5. (original) The process of claim 1 wherein separating said ethane/propane-rich stream further includes:

distilling said ethane/propane-rich stream in a de-ethanizer column.

Claims 6-7 (canceled)

Claim 8. (original) The process of claim 1 wherein said ethane-rich stream contains at least 90 % by mole ethane.

Claim 9. (original) The process of claim 1 wherein said ethane-rich stream contains at least 96.5 % by mole ethane.

Claim 10. (original) The process of claim 9 wherein said ethane-rich stream contains less than about 0.5 % by mole methane and less than about 3% by mole propane.

Claim 11. (original) The process of claim 1 wherein said methane-rich stream contains at least 95% by mole methane.

Claim 12. (previously presented) A process for recovering ethane from a methane, ethane and propane containing gas stream comprising:

(a) providing the hydrocarbon gas stream comprising from about 50 % to about 75 % by mole methane, from about 15 % to about 40 % by mole ethane and from about 1 % to about 4 % by mole propane;

(b) cooling the hydrocarbon gas stream to provide a partially condensed feed stream;

(c) separating said partially condensed feed stream into a vapor hydrocarbon feed stream and a condensed liquid hydrocarbon feed stream;

(d) providing a cryogenic heat exchanger;

(e) cooling the vapor hydrocarbon feed stream in ~~a~~ the cryogenic heat exchanger by heat exchange with a first cooling source, a second cooling source and a third cooling source to form a cooled and substantially condensed hydrocarbon feed stream, wherein said first cooling source is said condensed liquid hydrocarbon feed stream;

(f) distilling said ~~the~~ cooled and substantially condensed hydrocarbon feed stream and said ~~the~~ condensed liquid hydrocarbon feed stream in a demethanizer column to form a methane-rich stream and an ethane/propane-rich stream, wherein said methane-rich stream is said second cooling source;

(g) compressing said methane-rich stream to form a compressed methane-rich stream;

(h) cooling said compressed methane-rich stream to form a compressed methane-rich stream;

(i) turboexpanding said compressed methane-rich stream to a lower pressure to provide said third cooling source for said cryogenic heat exchanger;

(j) distilling said ethane/propane-rich stream in a de-ethanizer column to form an ethane-rich stream and a propane-rich stream; and

(k) recovering said ethane-rich stream.

Claim 13. (original) The process of claim 12 wherein said ethane-rich stream contains at least 96.5 % by mole ethane.

Claim 14. (currently amended) A process for providing a methane-rich stream from a hydrocarbon stream containing methane, ethane and propane comprising:

(a) providing the hydrocarbon gas stream comprising from about 50 % to about 75 % by mole methane, from about 15 % to about 40 % by mole ethane and from about 1 % to about 4 by mole propane;

(b) cooling the hydrocarbon gas stream to provide a partially condensed feed stream;

(c) separating said partially condensed feed stream to form a vapor hydrocarbon feed stream and a condensed liquid hydrocarbon feed stream;

(d) providing a cryogenic heat exchanger;

(e) cooling said vapor hydrocarbon feed stream by refrigeration in said cryogenic heat exchanger to form a cooled and substantially condensed hydrocarbon feed stream;

(f) separating the cooled and substantially condensed hydrocarbon feed stream into a methane-rich stream and an ethane/propane-rich stream, said methane-rich stream having a first pressure and a first temperature;

(g) expanding said methane-rich stream from said first pressure to a second pressure to lower the temperature of said methane-rich stream from said first temperature to a second temperature to provide a cooling source for said refrigeration, wherein said second pressure is

lower than said first pressure and further wherein said second temperature is lower than said first temperature;

(h) recovering said methane-rich stream.

Claim 15. (original) The process of claim 14 wherein said methane-rich stream contains at least 95 % by mole methane.